SIMSBURY PUBLIC SCHOOLS

NOVEMBER MATHEMATICS ASSESSMENT TEST - GRADE 3 **STUDENT PROFILE**

NAME_____ **TEACHER**_____

CONCEPTS	Items	Total	Number Wrong
1. Extended patterns for numbers and attributes.	1-3	3	_____
2. Identify alternative forms of expressing whole numbers using expanded notation.	4-6	3	_____
3. Relate addition and subtraction facts to pictures.	7-8	2	_____
4. Identify alternative forms of expressing whole numbers using regrouping.	9-10	2	_____
5. Rounding to the nearest 10.	11-13	3	_____
6. Identify >, <, =.	14-16	3	_____
Total		16	

NUMBER FACTS AND COMPUTATION			
7. Addition and subtraction fact families.	17-19	3	_____
8. Identify the missing addend.	20-21	2	_____
9. Add and subtract facts to 18.	22-25	4	_____
10. Add and subtract 1- and 2-digit numbers without regrouping.	26-29	4	_____
Total		13	

PROBLEM SOLVING/APPLICATIONS	Items	Total	Number Wrong
11. Solve problems involving order and magnitude of whole number.	30-31	2	____
12. Solve problems involving place value concepts such as 1 more/less, 10 more/less.	32-33	2	____
13. Write story problems from number sentences.	34-35	2	____
14. Identify the appropriate operation (addition or subtraction) to solve story.	36-37	2	____
15. Solve simple story problems involving addition or subtraction.	38-39	2	____
16. Solve problems rounding 2-digit whole number.	40-41	2	____
17. Identify needed information in problem.	42-43	2	____
Total		14	

MEASUREMENT/GEOMETRY			
18. Tell time to the nearest hour, half hour.	44-46	3	____
19. Determine the value of a set of coins.	47-48	2	____
20. Estimate lengths and areas.	49-50	2	____
Total		7	

GRAND TOTAL		50	

SIMSBURY PUBLIC SCHOOLS __ GRADE3 NOVEMBER ASSESSMENT

NOVEMBER MATHEMATICS ASSESSMENT TEST - GRADE 3

1. **What letter comes next in the pattern?**

   B C B D B E B F B _____

2. **Fill in the missing number.**

10	14	18
14	____	22
18	22	26

3. **What shapes come next in the pattern?**

4. **Which means the same as 300 + 80 + 7 ?**

   a. 30,807

   b. 300,807

   c. 3087

   d. 387

5. **Which means the same as 523?**

   a. 500 + 200 + 30

   b. 500 + 20 + 3

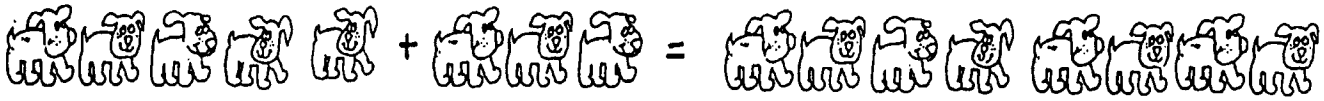
   c. 50 + 20 + 3

   d. 500 + 20 + 30

6. **Fill in the blanks.**

   67 = _____ tens + _____ ones

7.



_____ + _____ = _____

8.

_____ - _____ = _____

9. Circle the correct answer.

61 means the same as:

a. 5 tens and 11 ones

b. 5 tens and 1 one

c. 1 ten and 16 ones

d. 4 tens and 11 ones

10. Which means the same as:

7 tens and 11 ones

a. 81

b. 117

c. 71

d. 711

Round these numbers to the nearest 10.

11. 24 ----> _____

12. 37 ----> _____

13. 45 ----> _____

Put the correct sign in the circles.

14. 27 ◯ 27

15. 19 ◯ 27

16. 27 ◯ 13

Complete each fact family.

17. 3 + 4 = 7
    4 + 3 = 7
    7 - 4 = 3
    _____ = _____

18. 6 + 2 = 8
    8 - 2 = 6
    2 + 6 = 8
    _____ = _____

19. Use these numbers to write a fact family: 5, 4, 9

    a. _____ = _____
    b. _____ = _____
    c. _____ = _____
    d. _____ = _____

20. ☐ + 1 = 10

21. 11 - ☐ = 5

Write your answer.

22.
$$\begin{array}{r} 5 \\ +\ 7 \\ \hline \end{array}$$

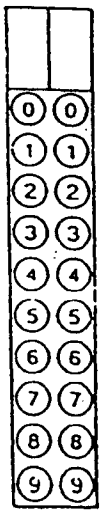
23. 8 + 9 = _____

24.
$$\begin{array}{r} 13 \\ -\ 6 \\ \hline \end{array}$$

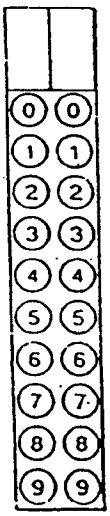
25. 16 - 9 = _____

Write your answer and shade in the grid for the following problems:

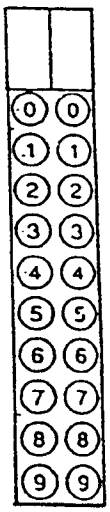
26.
$$\begin{array}{r} 6 \\ 3 \\ +\ 4 \\ \hline \end{array}$$



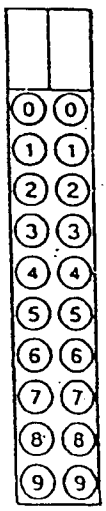
27.
$$\begin{array}{r} 62 \\ +\ 35 \\ \hline \end{array}$$



28.
$$\begin{array}{r} 86 \\ -\ 52 \\ \hline \end{array}$$



29.
$$\begin{array}{r} 95 \\ -\ 45 \\ \hline \end{array}$$



30. Jane has 93¢, Pete has 57¢, and Mary has 64¢. Order the amounts of money they have from the smallest to the largest.

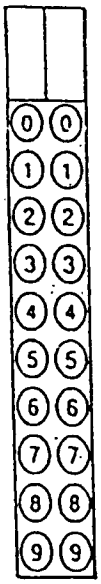
_____ _____ _____

31. Jim's teacher asked him to put these numbers in order from the greatest to the smallest. The numbers are 243, 316, and 271. How should Jim have answered?

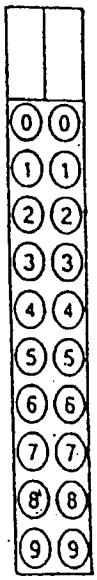
_____ _____ _____

Write the answer in the grid and shade in the bubbles for the following problems:

32. Marcie had 70¢ in her pocket. Her mom gave her 10¢ more. Now how much money does Marcie have?



33. What number is 10 less than 50?



34. **Write a story problem for this number sentence: 3 + 6 = _____**

Respond to the problem here.

35. **Write a story problem for this number sentence: 7 - 3 = _____**

Respond to the problem here.

Circle the *expression* that fits.

36. Lisa had 12 apples.
She used 8 of them
to make applesauce.
How many were left?

a. 12 + 8

b. 8 - 12

c. 12 - 8

d. 8 + 12

37. Jim had 6 stamps.
He bought 7 more
How many stamps does he
have altogether?

a. 7 - 6

b. 13 - 7

c. 6 + 7

d. 13 - 6

Solve the problems.

38. Bob Caught 7 fish.
Ed caught 9.
How many did they
catch altogether?

_____

39. There are 9 children at one table.
Four went to the teacher's desk.
How many were left at the table?

_____

Circle the correct answer.

40. There are 57 football cards in Don's collection. About how many cards does he have? Round this number to the nearest 10.

a. 55 b. 50 c. 60 d. 65

41. Sue sold 22 bracelets. About how many bracelets is this?

a. a little less than 20

b. a little more than 20

c. a little less than 30

d. a little more than 30

Is there enough information to solve these problems? If not, tell what you need to know.

42. **Tom and Mary each had a bag of marbles. Tom had 8 marbles. How many did they have in all?**

_____

43. **Juan has some hockey cards. He gave three away. How many does he have left?**

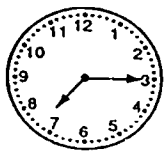
_____

Write the time.

44.

_____

45.



_____

46.

_____

Circle the correct answer.

47. Connie bought her sister a sticker book. Here is what Connie gave the clerk in the store.

a. 64¢ b. $1.00 c. 54¢ d. 52¢

48. Donna had 57¢ to buy some fruit. Which set of coins could she have?

a 

b 

c 

d 

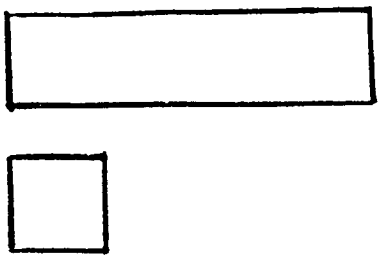
49. About how many squares will cover the rectangle?

a. 2

b. 6

c. 8

d. 4



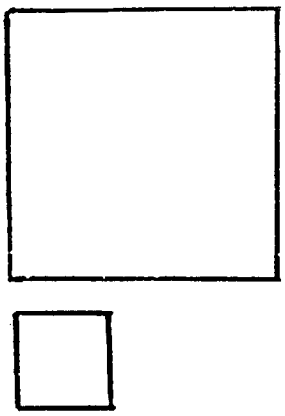
50. About how many small squares will fit in the large square?

a. 4

b. 6

c. 9

d. 12



BASIC ALGEBRA I
Final Exam
June 1995

1. Define Function.

2. State the three ways to represent a function.

3. Give an example of the following mathematical ideas from the situation "I am studying for a test"

   a. variable-
   b. constant-
   c. input variable-
   d. output variable-
   e. function-

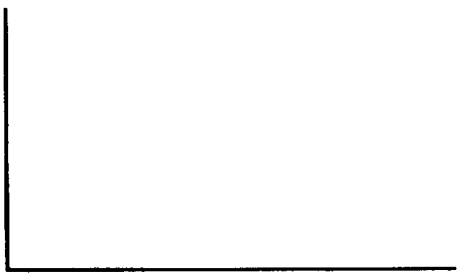
4. State the order of operations.

5. For the following situation sketch a reasonable graph. In the space provided, write a paragraph that clearly and fully explains your graph.

   SITUATION: When food is cooked and then set out on the table, its temperature depends on time.

   *Label axes.

   1. Label
   2. Graph



   3. Explanation

_____

_____

_____

Developed by James Paniati, Nonnewaug High School, Woodbury, Connecticut

6. At the Strikes to Spare bowling lanes the management offers a special deal to attract large groups on Sunday. There is a $25 charge for the group and then $0.50 per game bowled. That means that for the group the total cost of an outing at Strikes and Spare depends on the number of games bowled. If n represents the total number of games bowled, the rule for the total cost is: $C(n) = .5n + 25$.

   Answer each question below. Use any method you wish.

   a. How much will it cost if a group bowls 24 games? SHOW WORK.

   b. How many games gave been bowled if the total cost is $52? SHOW WORK.

   c. Is this a linear function? Explain how you know.

In 7-9 simplify the given expression.

7. $4(3x - 6)$

8. $7n + 13 - 2n + 5$

9. $3x + 6(3x - 2)$

In 10-11 multiply the binomials.

10. $(x + 4)(x + 3)$

11. $(3x - 6)(x + 2)$

12. **Situation** - Owners of a movie theater chain are studying business prospects for a new location in Hyattsville. They believe that daily profit of the theater will be a function of ticket price. The pattern of that relation is given by the following table. Use this table to answer a-e which follow.

Ticket Price t in dollars	Profit P(t) in dollars
0.00	-400
0.50	-260
1.00	-150
1.50	-65
2.00	0
2.50	50
3.00	90
3.50	120
4.00	140
4.50	150
5.00	155
5.50	150
6.00	140
6.50	120
7.00	90
7.50	50
8.00	0

a. According to the table, setting the ticket price at $3.50 will result in a profit of_____

b. According to the table, which ticket price(s) should result in a daily profit of $50.00?

c. What information about the business situation is given by "P(1.50) = -65"?

d. According to the table, which change in ticket price would cause greater change in daily profit? (Check the one that will.)

Increase from $1.50 to $2.00 _____ or Increase from $2.50 to $3.00 _____

e. Complete the following sentence to describe the overall relation between ticket price and daily profit given in the table:

As ticket price increases, profit_____

_____

In problems 13-19 solve the given equation analytically (mechanically). If the equation is a quadratic use the quadratic formula. Show all steps for each problem.

13. $6x = 22.5$

14. $5x + 7 = 42$

15. $\frac{3x}{5} - 12 = 11.4$

16. $7y + 3 = y + 9$

Quadratic Formula

$$x = \frac{-b + \sqrt{b2 - 4ac}}{2a} \qquad x = \frac{-b - \sqrt{b2 - 4ac}}{2a}$$

17. $-5x2 - 4x + 1 = 0$

18. $3x2 + 5x + 7 = 0$

19. $4x2 - 20x + 30 = 5$

In questions 20-22 solve the following equations graphically using the TI-82. State the solution and indicate the window.

20. $8.3\ x - 17 = 7.9$
State the window values of your graph

x-min _____
x-max _____
y-min _____
y-max _____

Solution x = _____

21. $6x - 5 = 37$

x-min _____
x-max _____
y-min _____
y-max _____

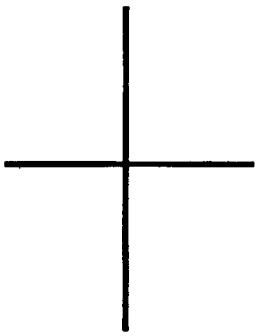
Solution x = _____

22. $-5x2 - 18x + 16 = 23$

Make a quick sketch of the TI-82 graph you viewed to solve the equation.

x-min _____
x-max _____
y-min _____
y-max _____

x = _____
x = _____



23. The U R Fit Health Spa offers two different membership packages. The first deal requires a membership fee of $100 plus $25.50 a month. The second deal requires a membership fee of $140 plus $18.50 a month.

a. Complete the following table of values for each of the situations described above.

Package #1 # of months Total Cost of Membership	0	1	2	3	4	5	6
Package #2 # of months Total Cost of Membership	0	1	2	3	4	5	6

b. Graph each of the above functions on the same set of axes. Be sure to label your axes and clearly indicate the scale. Use the graph paper provided.

c. If x = the number of months and y = the total cost, state the rule that represents each membership package.

Rule for package #1

Rule for package #2

d. Are these membership packages represented by linear functions? Explain clearly how you decided.

Answer the questions e-i based on the table, the graph or the rule that represent the Health Spa situation.

e. How many months did you belong if your total membership cost was at least $325?

Package #1_____

Package #2_____

f. What is the rate of change for each of these membership packages? (2 answers)

Package #1_____ per_____

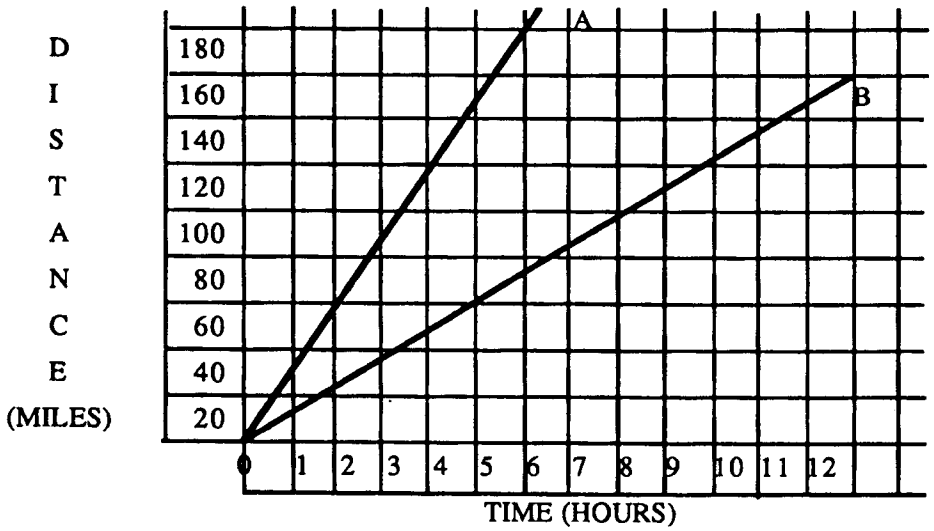
Package #2_____ per_____

g. When is the package #2 a cheaper deal?

h. Write an explanation of why some might choose package #1.

i Which is a better deal? Explain your answer.

24. Below is a graph comparing distance traveled as time passed for two different cars.



a. For car A use the coordinates of the indicated points to determine the speed of the car in miles per hour.
SHOW WORK

b. For car B you need to select two points you wish to use and then calculate the speed. (All units are already in miles per hour.) SHOW WORK

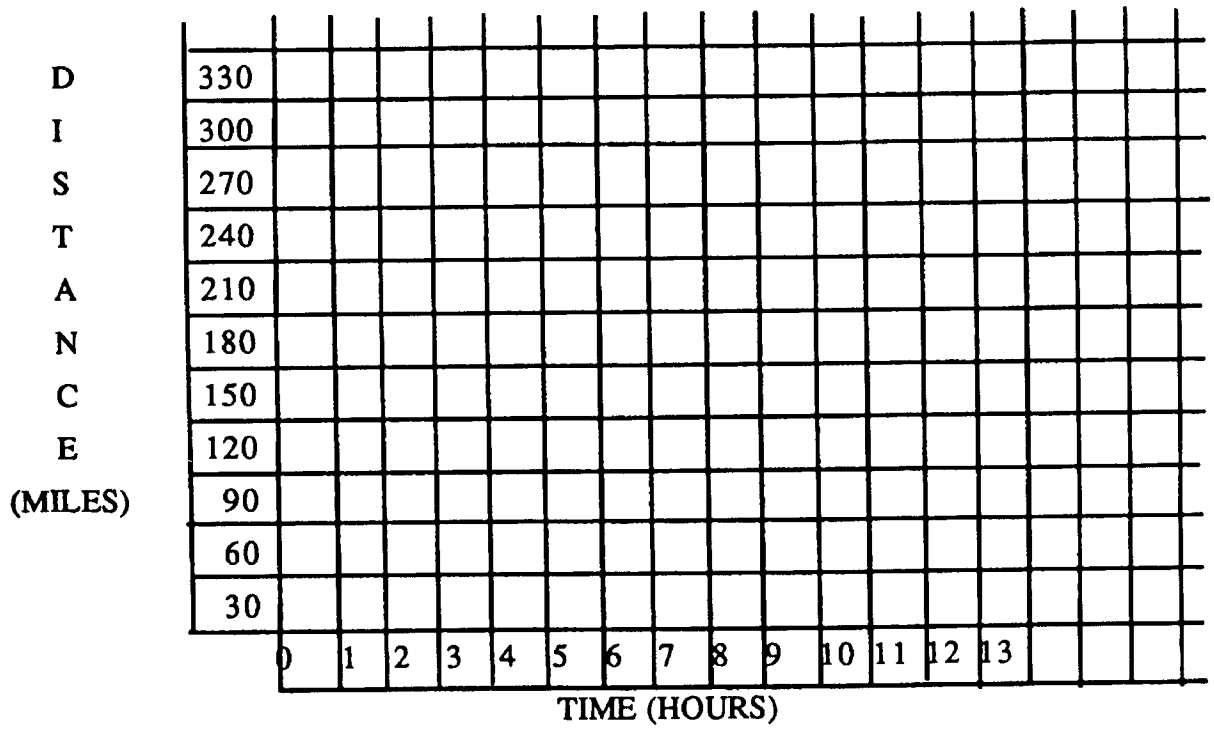
c. After 20 hours how far has each car gone? Two answers, one for each ca

d. How long does it take each car to travel 1200 miles? Two answers, one fo each car.

25. Draw the graph of each of the following cars below. Do all graphs on the coordinate plane below.

a. Car C left home driving 45 miles per hour.

b. Car D started 300 miles from home and headed toward home at 30 miles per hour.



26. Graph using data table method. Show all work.

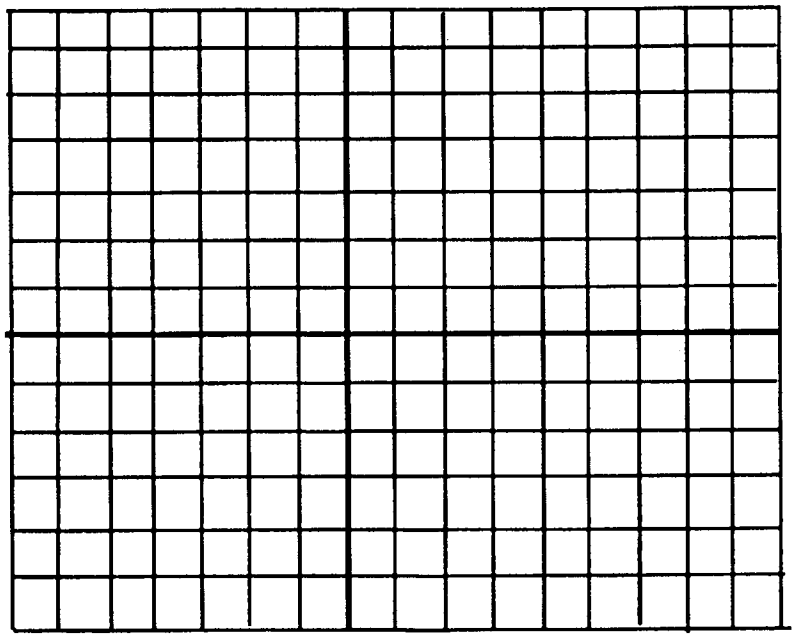
$y = x + 7$

x	y

27. Graph each by finding the x and y intercepts. Show all work.

$3x - 4y = 24$

*Graph #26 and #27 on the graph to the right.

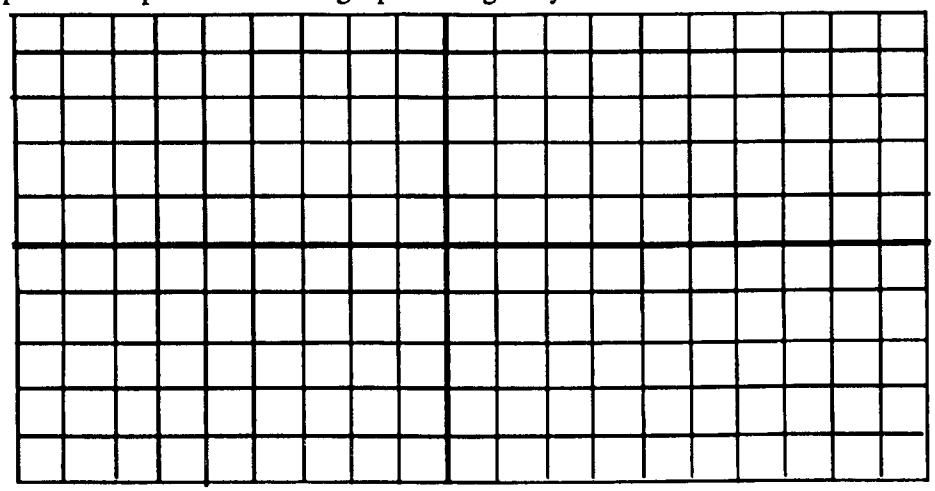


28 Graph by using the slope intercept method.

$y = \frac{3}{5}x - 6$

29. Change to slope intercept form and graph using any method.

$6x + 2y = 14$



30. For the following points, find a linear rule to fit the data. Show all work. Make sure to check the rule.

x	y
2	6
5	18

Formulas needed.

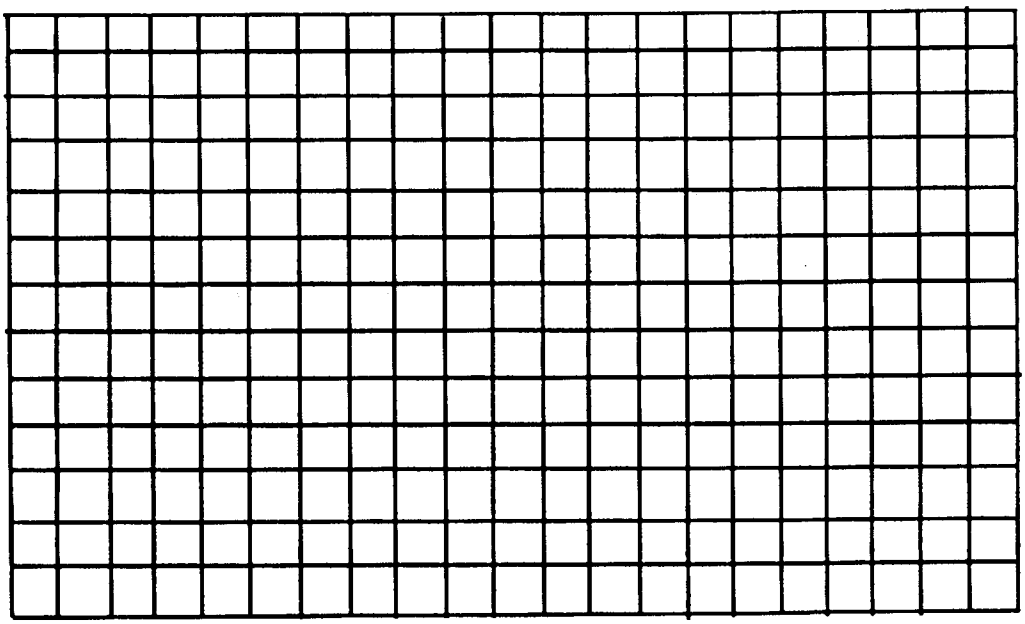
$$m = \frac{y2 - y1}{x2 - x1}$$

$$y - y1 = m(x - x1)$$

31. The data below show a relation between monthly sales of a soft drink and money spent on television advertising.

Money spent on Advertising (in thousands of $)	100	125	175	250
Sales (in thousands of $)	500	600	725	825

a. Graph the data below. Label axes. Put numbers along each axes.



b. Find the best rule for the data. Show all work.
Formulas needed.

$$m = \frac{y2 - y1}{x2 - x1} \qquad y - y1 = m(x - x1)$$

c. State the slope of your line and explain what it means in this problem.

d. Based on your rule predict the effect on sales of $300 thousand in advertising.

e. Based on your rule, how much money did you spend on advertising if you made $900 thousand in sales?

f. Give a reason why the data is not perfectly linear.

32. Give an example of each.

a. linear monomial

b. quadratic trinomial

c. 4th degree polynomial with 5 terms

33. Given 5x4 the 5 is called the _____
the 4 is called the _____

34. For each of the following solve for y.

Fill in data table. Show all work.

a. $y = 2x2 + 3x - 5$

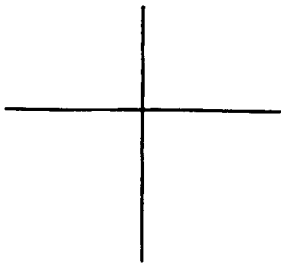
x	y
5	
16	

b. $y = 4x2 + 3x$
Find y when $x = -2$

35. For the following chart of data, decide if it represents a linear or a quadratic function. Explain how you decided.

x	-2	-1	0	1	2
y	17	9	3	-1	-3

36. On the graph below sketch an example of a quadratic equation with 2 real solutions.



37. Ann Archer shoots an arrow into the air with an initial upward velocity of 50 meters per second.

Use Vertical Motion Formula: $d = -5t2 + rt$

a. How high is the arrow after 4 seconds?
Solve this problem analytically and not graphically.
SHOW ALL STEPS.

b. When will it be 80 meters high? (Remember to find two answers)

Use Quadratic Formula: $x = \frac{-b + \sqrt{b2 - 4ac}}{2a}$ $x = \frac{-b - \sqrt{b2 - 4ac}}{2a}$

38. Chuck throws a rock with an initial velocity of 30 meters per second.

Solve the following with either the TI-82 or analytically. You do not need to show any work.

a. What is the altitude after 2 seconds?

b. When is it 25 meters above from where it was thrown?

c. When is it back down at the thrower's level?